



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Nguyen T. Ha Docket No. 283014-00026
Applicant: Zhu, Y. et al.
Serial No. 09/660,309 Group Art Unit 2821
Filed: September 12, 2000 In response to
Paper No:

Title: DIELECTRIC VARACTORS WITH OFFSET TWO-LAYER
ELECTRODES

AMENDMENT

September 5, 2001

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

In response to the Office Action dated June 5, 2001, please amend the
above-identified application as follows:

IN THE SPECIFICATION:

Please replace the first paragraph on page 7 with the following rewritten
paragraph:

-- solution deposition (MOSD or simply MOD), metal-organic vapor
deposition (MOCVD), pulse laser deposition (PLD), sputtering, screen printing and so on.
The thickness of the thin or thick film that lies above the bottom electrode is preferably in
the range of 0.2 μm to 4 μm . It is well known that the performance of a varactor depends
on the quality of the tunable dielectric film. Therefore low loss and high tunability films
should be selected to achieve high Q and high tuning of the varactor. These tunable
dielectric films have dielectric constants of 2 to 1000, and tuning of greater than 20 % with
a loss tangent less than 0.005 at around 2 GHz. To achieve low capacitance, low dielectric
constant (k) films should be selected. However, high k films usually show high tunability.
The typical k range is about 100 to 500. --